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All: 22 Review: 4

Items 1 - 20 of 22 Page 1 of 2 Next

1: Stohl EA, Criss AK, Seifert HS. Related Articles, Links

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J Hepatol. 2005 Apr;42(4):520-7. Epub 2005 Jan 8.
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J Cell Biochem. 2005 Feb 15;94(3):520-8.
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PMID: 9623518 [PubMed - indexed for MEDLINE]

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Items 1 - 20 of 22 Page 1 of 2 Next
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Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2782	metalloproteinase or metalloprotease	USPAT	OR	OFF	2005/11/14 21:11
L2	326	l1 near4 (human or sapien)	USPAT	OR	OFF	2005/11/14 21:12
L3	0	l1 near4 ("520")	USPAT	OR	OFF	2005/11/14 21:12
L4	727	((molecular adj weight) or (size)) near4 ("520")	USPAT	OR	OFF	2005/11/14 21:13
L5	0	l2 and l4	USPAT	OR	OFF	2005/11/14 21:13

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L1         93593 METALLOPROTEINASE OR METALLOPROTEASE

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=> s s l1 (4A) (human or sapien)
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=> s ((molecular weight) or (size)) (4A) (520)
L2           414 ((MOLECULAR WEIGHT) OR (SIZE)) (4A) (520)
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L3          7932 L1 (4A) (HUMAN OR SAPIEN)

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degraded or degrading or cleaved)
L1          3496 CASEIN (4A) (DEGRADE OR DEGRADATION OR CLEAVE OR
CLEAVING OR
                 DEGRADED OR DEGRADING OR CLEAVED)

=> s Casein (4A) (protease or proteinase or peptidase)
L2          2884 CASEIN (4A) (PROTEASE OR PROTEINASE OR PEPTIDASE)

=> s Casein (4A) (industrial or commercial or feed)
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L3 1669 CASEIN (4A) (INDUSTRIAL OR COMMERCIAL OR FEED)

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L4 1 L1 AND L2 AND L3

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L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1972:524924 CAPLUS
DN 77:124924
TI Immunochemical studies on milk components. V. Comparative examination on
the antigenicity of **casein** hydrolyzed by some **proteases**
AU Tokita, Fumisaburo; Takahashi, Fujio
CS Coll. Agric., Shinshu Univ., Ina, Japan
SO Milchwissenschaft (1972), 27(7), 422-6
CODEN: MILCAD; ISSN: 0026-3788
DT Journal
LA English
AB Expts. were carried out to determine the antigenic properties of casein
hydrolyzed by various **com. proteases** from animals,
microorganisms, and a plant. Nagarse (Bacillus subtilis) and fungal
(Aspergillus oryzae) enzymes had high proteolytic activities against
casein, and considerable losses of the antigenic activities were found in
the hydrolyzates. Pronase-P (Streptomyces griseus) also had high
proteolytic activity against casein but low antigenic activity was
retained in the hydrolyzate for a relatively long time. The antigenic
activities of casein hydrolyzed by pancreatin, pepsin, and papain
gradually decreased and were almost destroyed after 9 hr. The casein
hydrolyzed by trypsin, α-chymotrypsin, pepsin and rennin kept
relatively high antigenic activity, even after 9 hr. The decrease or
elimination of the antigenic activity of casein was greatly influenced by
the proteolytic activity and substrate specificity of the protease used.
Furthermore, it may be presumed that the antigenic structure of
casein is **cleaved** effectively by a protease having
pepsin-like substrate specificity. When casein was hydrolyzed by rennin,
pepsin, and trypsin, or by pepsin and trypsin successively, the lowering
or elimination of the antigenic activity of casein was mainly affected by
the rate of hydrolysis of casein by pepsin. The antigen values of casein

were decreased more rapidly by trypsin after partial hydrolysis by pepsin
at pH 2.0 than by trypsin alone.

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L6 ANSWER 1 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:490739 CAPLUS
DN 141:59701
TI **Caseins** as cysteine **protease** inhibitors
IN Katunuma, Nobuhiko; Yamada, Akio; Kawaguchi, Yasushi; Takakura, Natsuko
PA Morinaga Milk Industry Co., Ltd., Japan
SO PCT Int. Appl., 49 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004050118	A1	20040617	WO 2003-JP14263	20031110
W: AU, CA, CN, ID, JP, KR, NO, NZ, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
CA 2481489	AA	20040617	CA 2003-2481489	20031110
US 2005148504	A1	20050707	US 2003-510088	20031110
EP 1568377	A1	20050831	EP 2003-812286	20031110
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
NO 2004004258	A	20041028	NO 2004-4258	20041007

PRAI JP 2002-347801 A 20021129
JP 2003-147035 A 20030523
WO 2003-JP14263 W 20031110
AB Disclosed is a cysteine protease inhibitor containing, as the active
ingredient, casein which is a milk-origin protein, a peptide fragment of
casein and/or a hydrolyzate of casein. This cysteine protease inhibitor
is usable in preventives and remedies for osteoporosis, malignant tumoral
hypercalcemia, breast cancer, prostatic cancer, periodontal disease,
bacterial or viral infection, etc. as well as foods, drinks, feeds and so
on.
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L6 ANSWER 1 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:490739 CAPLUS
DN 141:59701
TI **Caseins** as cysteine **protease** inhibitors
IN Katunuma, Nobuhiko; Yamada, Akio; Kawaguchi, Yasushi; Takakura, Natsuko
PA Morinaga Milk Industry Co., Ltd., Japan
SO PCT Int. Appl., 49 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
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PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004050118	A1	20040617	WO 2003-JP14263	20031110
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RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
CA 2481489	AA	20040617	CA 2003-2481489	20031110
US 2005148504	A1	20050707	US 2003-510088	20031110
EP 1568377	A1	20050831	EP 2003-812286	20031110
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				

IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
NO 2004004258 A 20041028 NO 2004-4258 20041007
PRAI JP 2002-347801 A 20021129
JP 2003-147035 A 20030523
WO 2003-JP14263 W 20031110
AB Disclosed is a cysteine protease inhibitor containing, as the active ingredient, casein which is a milk-origin protein, a peptide fragment of casein and/or a hydrolyzate of casein. This cysteine protease inhibitor is usable in preventives and remedies for osteoporosis, malignant tumoral hypercalcemia, breast cancer, prostatic cancer, periodontal disease, bacterial or viral infection, etc. as well as foods, drinks, feeds and so on.
RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L6 ANSWER 2 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:631382 CAPLUS
DN 141:156323
TI Manufacture of complexes of casein-bound calcium or colloidal calcium with phosphopeptides
IN Toba, Yasuhiro; Takada, Yukihiro; Kawakami, Hiroshi; Aoki, Takayoshi
PA Snow Brand Milk Products Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004215521	A2	20040805	JP 2003-4211	20030110

PRAI JP 2003-4211 20030110
AB The complexes, which are useful for prevention and treatment of osteoporosis, fracture, arthritis, low back pain, etc., are are used by adding to drugs, foods, and **feeds**, are manufactured by hydrolyzing **casein** micelles with **proteinases**, adjusting the hydrolyzates at pH ≤5.4, removing insol. peptides and unhydrolyzed

caseins, and adjusting the solution containing casein-bound Ca and/or colloidal Ca and phosphopeptides to pH ≥6.6. Thus, casein micelles, prepared by treating skim milk with rennets, were suspended in H2O and treated with trypsin at 37° for 6 h. The hydrolyzate was adjusted to pH 4.6 with HCl, stirred for 30 min, and centrifuged. The supernatant was adjusted to pH 9.0 with NaOH, filtered through a ultrafilter (cut-off mol. weight 30,000 Da), and freeze-dried to give complexes of casein-bound Ca and colloidal Ca with phosphopeptides as white powders.

L6 ANSWER 3 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:818758 CAPLUS
DN 142:154517
TI Release of short and proline-rich antihypertensive peptides from casein hydrolysate with an Aspergillus oryzae protease
AU Mizuno, S.; Nishimura, S.; Matsuura, K.; Gotou, T.; Yamamoto, N.
CS R&D Center, Calpis Co., Ltd., Kanagawa, 229-0006, Japan
SO Journal of Dairy Science (2004), 87(10), 3183-3188
CODEN: JDSCAE; ISSN: 0022-0302
PB American Dairy Science Association
DT Journal
LA English
AB Angiotensin-I converting enzyme inhibitory activities were measured after hydrolysis of **casein** by 9 different **com**. available proteolytic enzymes. Among these enzymes, a protease isolated from Aspergillus oryzae showed the highest angiotensin-I converting enzyme inhibitory activity per peptide. The A. oryzae peptide also showed the highest antihypertensive effect in spontaneously hypertensive rats when the systolic blood pressure was measured 5 h after oral administration of 32 mg/kg of various enzymic hydrolyzates. Significant antihypertensive effects were observed with dosages of 9.6, 32, and 96 mg of the A. oryzae peptide/kg of body weight (BW), and the effects were dependent on these peptide dosages. Anal. of peptide length showed the A. oryzae hydrolyzate was the shortest of all tested casein hydrolyzates; the peptide mixture had an average value of 1.4 amino acids (AA) in the sequence. To further

characterize the A. oryzae hydrolyzate, the authors analyzed the AA sequence of the whole peptide mixture Various AA were detected at the first AA position, however, an increased number of Pro residues were observed at the second and third position of the A. oryzae hydrolyzate. No strong signals were detected after the fourth AA position of the A. oryzae hydrolyzate. These results suggest that the casein hydrolyzate of A. oryzae, which expressed potent antihypertensive effects in spontaneously hypertensive rats, mainly contain short peptides of X-Pro and X-Pro-Pro sequences.
RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:530288 CAPLUS
DN 131:169647
TI Casein hydrolyzate and its production method.
IN Hayazawa, Hironori; Miyakawa, Hiroshi; Echi, Hiroshi
PA Morinaga Milk Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 11225686	A2	19990824	JP 1998-44394	19980210
PRAI JP 1998-44394		19980210		

AB The casein hydrolyzate has a hydrolysis rate of 8-15%, non-protein N 200-350 mg/g hydrolyzate, amino acid score of 100, no precipitation after heating 10 mins. at 100° at pH 4, and no off-odor and -taste. The casein hydrolyzate is useful for manufacturing feed, beverage, food, pharmaceutical, etc.

L6 ANSWER 5 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:157207 CAPLUS
DN 130:291281
TI Immunostimulatory action of a commercially available casein phosphopeptide preparation, CPP-III, in cell cultures

AU Hata, I.; Ueda, J.; Otani, H.
CS Laboratory Food Bioscience, Faculty Agriculture, Shinshu University,
Minamiminowa, 399, Japan
SO Milchwissenschaft (1999), 54(1), 3-7
CODEN: MILCAD; ISSN: 0026-3788
PB VV-GmbH Volkswirtschaftlicher Verlag
DT Journal
LA English
AB A **com.** available **casein** phosphopeptide preparation, CPP-III, mainly consisting of residues 1-32 of bovine αs2-casein and residues 1-28 of β-casein, enhanced the proliferative response induced by lipopolysaccharide (LPS), phytohemagglutinin (PHA), and Con A stimulation and the Ig production in mouse spleen cell cultures. CPP-III displayed a mitogenic activity in mouse thymocyte, nude mouse spleen cell and rabbit Peyer's patch cell cultures without LPS, PHA, and ConA. CPP-III displayed little mitogenic activity in mouse plastic-adherent cell cultures. The mitogenic activity of CPP-III for mouse spleen cells was hardly influenced by proteinase action such as pepsin, trypsin, chymotrypsin, and pancreatin, whereas it reduced when CPP-III was treated with acid phosphotase. The **com.** available **casein** phosphopeptide preparation, CPP-III, has an immunostimulating activity in cell cultures and the activity is attributable to the O-phospho-L-Ser residue, suggesting that the immunostimulating activity of CPP-III is relatively stable to proteinase action in GI tracts.
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L6 ANSWER 6 OF 31 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
DUPLICATE 1
AN 1998:478276 BIOSIS
DN PREV199800478276
TI Simple tests for predicting the lytic behavior and protolytic activity lactococcal strains in cheese.
AU Boutrou, R.; Sepulchre, A.; Gripon, J. C.; Monnet, V. [Reprint author]
CS Unite Biochemie Structures Proteines, Inst. Natl. Rech. Agron., Domaine de Vilvert, 78352 Jouy-en-Josas Cedex, France

SO Journal of Dairy Science, (Sept., 1998) Vol. 81, No. 9, pp. 2321-2328.
print.
CODEN: JDSCAE. ISSN: 0022-0302.
DT Article
LA English
ED Entered STN: 5 Nov 1998
Last Updated on STN: 5 Nov 1998
AB The variations of the autolytic and proteolytic potential of lactococci need to be taken into account because these variations probably influence the development of organoleptic properties during cheese ripening. To predict lytic capacity, proteolytic potential, and specificity of cell surface-associated proteinase, we developed simple tests that were applied to 26 industrial strains and a few reference strains of Lactococcus lactis. The tests allowed us to measure the autolytic capacity of lactococci in a buffer or in a pseudo curd under conditions that were close to those of cheese ripening and to evaluate global peptidase activity, **proteinase** activity, and specificity using **casein** or casein hydrolysate as a substrate. We confirmed the variability of the autolytic capacity of lactococci and classified the strains into three groups by low, moderate, or high lytic capacity according to their behavior in the buffer and in pseudo curd tests. Validation of the latter was obtained by the observation of similar lytic behavior in the two reference strains of Lactococcus lactis, AM2 and NCDO763, which were highly autolytic and poorly autolytic, respectively, both in our tests and in previously reported cheese experiments. The global activities of peptidases and proteinase varied from 1 to 6 among the strains. Most of the proteinases that were isolated from the highly proteolytic **industrial** strains hydrolyzed beta-**casein** preferentially and, consequently, are more like the PI-type proteinase than the PIII-type. We used simple, rapid methods to test a large number of strains to predict their lytic behavior and proteolytic activity in

cheese.

L6 ANSWER 7 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1998:523144 CAPLUS
DN 129:275014
TI Production of caseinophosphopeptides (CPPs) from sodium caseinate using a
range of commercial protease preparations
AU McDonagh, David; FitzGerald, Richard J.
CS Teagasc, Dairy Products Research Centre, Cork, Ire.
SO International Dairy Journal (1998), 8(1), 39-45
CODEN: IDAJE6; ISSN: 0958-6946
PB Elsevier Science Ltd.
DT Journal
LA English
AB Sodium caseinate hydrolyzates were generated at laboratory-scale using 28 com.
protease prepns. of bacterial, fungal, plant and animal origin.
Caseinophosphopeptides (CPPs) were enriched from these hydrolyzates by
calcium chloride aggregation at pH 7.5 followed by ethanol precipitation of the
aggregates. CPP yield ranged from 3.4 to 16.0% (weight/weight) of the original
protein. The calcium binding and solubilizing abilities of the enriched
CPPs ranged from 0.40 to 0.61 and 7.4 to 24.0 mg Ca2+ mg-1 CPP, resp.
Hydrolysis of sodium caseinate with Bioprotease N100L resulted in a 16.0%
yield of CPPs which could solubilize 19.1 mg Ca2+ mg-1 CPP. Significant
differences in the gel permeation and reversed-phase chromatog. profiles
for the various enriched CPPs were evident. In general, no apparent
relationship was observed between hydrolyzate degree of hydrolysis (DH%), CPP
yield, CPP calcium binding and solubilizing abilities, and CPP apparent
mol. mass distribution and hydrophobic peptide profiles.
RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 8 OF 31 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
DUPLICATE 2
AN 1997:319116 BIOSIS
DN PREV199799609604
TI Functional and immunological properties of casein hydrolysate produced
from a two-stage membrane system.

AU Lin, Shih-Bin; Chiang, Wen-Dee; Cordle, Christopher T.; Thomas, Ronald L.
[Reprint author]
CS Dep. Food Science, Clemson Univ., Clemson, SC 29634-0317, USA
SO Journal of Food Science, (1997) Vol. 62, No. 3, pp. 480-483.
CODEN: JFDSAZ. ISSN: 0022-1147.
DT Article
LA English
ED Entered STN: 26 Jul 1997
Last Updated on STN: 26 Jul 1997
AB A uniform hydrolysate with a relatively low free amino acid content (lt
5%) was produced from bovine **casein** with a **commercial protease** (Alcalase) in a two-stage membrane reactor. The trichloroacetic acid soluble nitrogen was 98.68% and degree of hydrolysis
was 23.2% for the second-stage hydrolysate. The retained immunologically
active casein was 2.32% and whey protein was 1.09% in the hydrolysate as
determined by ELISA. The second-stage protein hydrolysate was completely
soluble at 2% (w/v) from pH 3.0 to 9.0. Water sorption increased two to
four times at water activities of 0.33 to 0.95 as compared to untreated
casein.

L6 ANSWER 9 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1996:287866 CAPLUS
DN 124:319530
TI The activity of **commercial protease** to **casein** and powdered wool and the rate of loss in weight of wool
AU Takatuka, Tadashi; Yobiko, Yoshihiro; Joukou, Kyouhei; Kimura, Kazuomi
CS Osaka Prefect. Ind. Technol. Res. Inst., Osaka, 550, Japan
SO Sangyo Gijutsu Sogo Kenkyusho Hokoku, Gijutsu Shiryo (1996), 5, 60-3
CODEN: SGSGFF; ISSN: 0917-3927
PB Osaka-furitsu Sangyo Gijutsu Sogo Kenkyusho
DT Journal
LA Japanese
AB The activities of 30 kinds of **protease** to **casein** and powdered wool were measured to establish the evaluation standard for selection of
suitable protease to wool finishing. The relation of the rate loss in weight
of wool and the logarithmic concentrate of protease gave a straight line and the
slope of the line was adopted the ability index of loss in weight

L6 ANSWER 10 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1994:456417 CAPLUS
DN 121:56417
TI **Feeds** containing **casein** calcium hydrolyzates for fish culture
IN Ito, Toshihiro; Kamigaki, Masahiro; Haneki, Takashi
PA Taiyo Kagaku Kk, Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06062765	A2	19940308	JP 1992-236425	19920812
JP 3201840	B2	20010827		

PRAI JP 1992-236425 19920812
AB Feeds, which enhance absorption of minerals and proteins or N sources in cultured fish, contain casein Ca hydrolyzates. These hydrolyzates mainly contain peptides of mol. weight 1000-5000 and are manufactured by treatment of **casein** Ca with **protease** of Aspergillus sp. The feeds improve survival and growth rates of fish. Casein Ca powders were treated with Protease P "Amano" in H2O at 45° for 20 h to manufacture the hydrolyzates. The hydrolyzates, which were intraduodenally administered to rats, showed a significant increase in amino acid uptake from the intestine.

L6 ANSWER 11 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1993:648906 CAPLUS
DN 119:248906
TI **Feeds** containing **casein** calcium hydrolyzates for young animals
IN Ito, Toshihiro; Haneki, Takashi
PA Taiyo Kagaku Kk, Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05219898	A2	19930831	JP 1992-57160	19920208

PRAI JP 1992-57160 19920208
AB **Feeds** for young animals contain **casein** Ca hydrolyzates (mainly containing peptides of mol. weight 1000-5000) manufactured by treatment of **casein** Ca with **protease** of Aspergillus sp. Casein Ca hydrolyzates (manufactured with neutral protease of Aspergillus) were effectively absorbed in rats and were fed to piglets to show greater body weight increase than controls.

L6 ANSWER 12 OF 31 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2005) on STN DUPLICATE 3
AN 94:29205 AGRICOLA
DN IND20384539
TI Growth of nonproteolytic Lactococcus lactis in culture medium supplemented with different casein hydrolyzates.
AU St-Gelais, D.; Roy, D.; Hache, S.; Desjardins, M.L.; Gauthier, S.F.
AV DNAL (44.8 J822)
SO Journal of dairy science, Nov 1993. Vol. 76, No. 11. p. 3327-3337
Publisher: Champaign, Ill. : American Dairy Science Association.
CODEN: JDSCAE; ISSN: 0022-0302
NTE Includes references
CY Illinois; United States
DT Article
FS U.S. Imprints not USDA, Experiment or Extension
LA English
AB The growth and lactic acid production of nonproteolytic variants of Lactococcus lactis, three Lactococcus lactis ssp. cremoris strains (E8, Wg2, and HP) and one Lactococcus lactis ssp. lactis strain (1076), were compared with those of their parent strains in Garches medium supplemented with different casein hydrolyzates. Molecular weight distribution and AA composition of casein hydrolyzates were different. Two fractions of alcalase casein hydrolyzates separated and concentrated by a two-step ultrafiltration process were compared with two **commercial casein** hydrolyzates. **Proteinase**-negative variants of lactococci exhibited the same specific growth rate and production of

lactic acid as proteinase-positive strains in all enriched Garches media.
Cell growth was affected by molecular weight distribution of peptides in
hydrolyzates, but not by their AA composition. Lactococcus lactis ssp.
lactis grew better than L. lactis ssp. cremoris, but its lactic acid
production was similar to that of E8 strains. Among L. lactis ssp.
cremoris, Wg2 strains grew better in Garches medium supplemented with
casein hydrolyzates with molecular weight < 2000 Da, but growth and
lactic production of HP strains were better in Garches medium enriched
with casein hydrolyzates with molecular weight > 2000 Da. Different casein
hydrolyzate fractions could be used to supplement culture medium and to
standardize milk cultures: however, choice to casein hydrolyzates
depends on subspecies of lactococci.

L6 ANSWER 13 OF 31 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on
STN DUPLICATE 4
AN 1993:297798 BIOSIS
DN PREV199396016023
TI Hydrolysis of casein by alcalase.
AU Camacho Rubio, F.; Gonzalez Tello, P.; Paez Duenas, M.; Marquez Moreno, M.
C.; Fernandez Cuadrado, V.
CS Dep. Ingenieria Quimica, Universidad de Granada, 18071 Granada, Spain
SO Revista Espanola de Ciencia y Tecnologia de Alimentos, (1993) Vol. 33, No.
1, pp. 59-70.
ISSN: 1131-799X.
DT Article
LA Spanish
ED Entered STN: 23 Jun 1993
Last Updated on STN: 3 Jan 1995
AB We have assayed the enzymatic hydrolysis of bovine **casein** using
a **commercial protease**, Alcalase 0.6 L, at pH = 8.0 and
50 degree C. Kinetic treatment of the experimental data produced an
integral equation for the reaction rate, allowing us to evaluate the
degree of hydrolysis as a function of the operating conditions: the
initial concentrations of the enzyme and the substrate, and hydrolysis

time, with a deviation of less than 5%. The equation for the reaction rate supported the idea that the hydrolysis reaction was one of zero order with respect to the substrate and that a second order denaturalization of the enzyme took place simultaneously.

L6 ANSWER 14 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1993:123469 CAPLUS
DN 118:123469
TI In-vitro digestibility simulating the proteolysis of feed protein in the midgut gland of grass shrimp (Penaeus monodon)
AU Lan, Chun Chieh; Pan, Bonnie Sun
CS Fish. Sci. Coll. Natl. Taiwan Ocean Univ., Keelung, Taiwan
SO Aquaculture (1993), 109(1), 59-70
CODEN: AQCLAL; ISSN: 0044-8486
DT Journal
LA English
AB Due to feed ingestion, maximal organ weight was reached in 1 h after feeding for the foregut, and 5 h after feeding for the midgut where the highest protease activity was observed in the whole digestive-tract of shrimp. The proteases in the midgut gland showed two pH optima at 7.5 and 4.0, that at pH 7.5 being higher. Feed proteins were digested in-vitro with crude enzyme extract from the midgut gland of grass shrimp at 30°, pH 7.5 for up to 4 h and in two steps at pH 7.5 for 2 h followed by 2 h at pH 4.0. The latter increased feed protein hydrolysis to 1.12-1.56 times that at pH 7.5 for 4 h. The two-step hydrolysis by the shrimp midgut gland extract can serve as an in-vitro method to approx. feed protein digestibility. The tests showed the following order of digestibility: Artemia>predissolved **casein**>gluten, pelletized shrimp **feed**>unpelletized shrimp feed>brown fish meal>white fish meal>soybean meal>yeast, undissolved casein. The protein digestibility correlated with the amount of lysine and arginine in the total amino acid composition of the protein sources, indicating that trypsin plays an important role in digestion in shrimp. Aromatic amino acid content had a pos. correlation with the digestibility of water-soluble or native protein

sources, but a neg. correlation with that of the heat-denatured protein
sources, indicating that hydrophobic interaction in heat-processed
proteins decreased their digestibility.

L6 ANSWER 15 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1991:97243 CAPLUS
DN 114:97243
TI Causes of the decrease in fluorescence due to proteolysis of α-casein
AU Ostoa-Saloma, Pedro; Ramirez, Jorge; Perez-Montfort, Ruy
CS Inst. Fisiol. Cel., Univ. Nacl. Auton. Mexico, Mexico City, 04510, Mex.
SO Biochimica et Biophysica Acta, Protein Structure and Molecular Enzymology
(1990), 1041(2), 146-52
CODEN: BBAEDZ; ISSN: 0167-4838
DT Journal
LA English
AB Fluorescence decrease in casein solns. induced by proteolytic enzymes is
mainly due to cleavage of α-casein, and in particular to
αS1-casein, which is quant. the main component of **com**.
casein. Treatment of α-casein with o-iodosobenzoic acid
diminished its intrinsic fluorescence considerably and abolished the
decrease in fluorescence induced by proteolytic cleavage. The C-terminal
tryptophan (Trp) at position 199 in αS1-casein contributes
.apprx.30% to the overall effect, while the Trp at position 164
contributes about 70%. Treatment of α-casein with cyanogen bromide
lowered the initial fluorescence of the preparation, but, in the resulting
fragment, trypsin still diminished some of the residual fluorescence. The
velocity of decrease in fluorescence correlates with the distance from the
Trp in position 164 at which the peptide bond is broken. This effect
seems to be rather unique for the caseins, but particularly for aS1-casin;
this is due to the existence of a Trp that is in the vicinity of
hydrophobic amino acids and which upon hydrolysis, becomes exposed to a
more hydrophilic environment.

L6 ANSWER 16 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1990:629974 CAPLUS
DN 113:229974
TI Modification of the functional properties of wheat flour by proteolytic

enzymes. Part 1. Activity against substrates in solution and rheological
effects
AU Kieffer, Rolf; Rashed, Mohamed Magdy; Belitz, Hans Dieter
CS Kurt-Hess-Inst. Mehl-Eiweissforsch., Garching, D-8046, Germany
SO Zeitschrift fuer Lebensmittel-Untersuchung und -Forschung (1990), 191(2),
104-9
CODEN: ZLUFAR; ISSN: 0044-3026
DT Journal
LA German
AB Since it is difficult to predict the effects of proteolytic enzymes used
to regulate dough properties and the baking performance of flours from
common activity methods with Hb or casein as substrates, more reliable
methods were investigated by determining their activities with other substrates
and correlating these with their rheol. effects in dough and gluten,
measured by mixing (kneading resistance) and extension tests (resistance,
extensibility). Interest was focussed on 2 industrial enzymes from
Aspergillus oryzae, EL 34 and EL 36. Both enzymes were very active
against Hb, but showed different rheol. effects. While EL 34 strongly
weakened the dough, EL 36 exhibited no changes. A great variability of
the specific activities of the investigated enzymes against Hb and
azocasein was observed as well as against dissolved flour proteins.
Altogether, the activities against substrates in solution were not correlated
with rheol. effects in dough and gluten, systems of relatively low
moisture content.

L6 ANSWER 17 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1988:222999 CAPLUS
DN 108:222999
TI Effect of tin-treatment on frictional electrification of protease-treated
Chinon fabric
AU Ishii, Kiyoshi
CS Hiroshima Bunkyo Women's Coll., Hiroshima, 731-02, Japan
SO Sen'i Gakkaishi (1987), 43(12), 644-9
CODEN: SENGA5; ISSN: 0037-9875
DT Journal

LA English
AB When Chinon fabric was treated with some proteases to introduce micro-voids by eliminating the protein component in its unit fibers, frictional electrification of the fabric apparently increased. The electrification was effectively prevented by depositing insol. tin phosphate in the microvoids of the unit fibers. This effect was ascribed to a significant increase in the elec. conductivity of the fabric by the insol. and highly hygroscopic tin salt. Furthermore, the deposited salt was mostly held in the fabric even after washing under home laundry conditions. Thus, the effect to prevent frictional electrification was considered to be practically durable in the protease-treated Chinon fabric. It was also confirmed that the tin treatment as well as the enzyme treatment gave no practical effect on various phys. properties of Chinon fabric except for the frictional electrification and dyeing property.

L6 ANSWER 18 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1987:419765 CAPLUS
DN 107:19765
TI Effect of different samples of **casein** in the determination of **protease** inhibitory activities
AU Sujatha, S.; Udupa, S. L.; Pattabiraman, T. N.
CS Dep. Biochem., Kasturba Med. Coll., Manipal, 576 119, India
SO Indian Journal of Clinical Biochemistry (1987), 2(1), 14-20
CODEN: IJCBEY; ISSN: 0970-1915
DT Journal
LA English
AB Proteolytic activities of crystalline trypsin, α-chymotrypsin, and elastase were .apprx.25, 25, and 50% higher, resp., with a purified sample of **casein** compared to 4 other **com**. samples. The difference was not due to variations in endogenous **protease** activity in **casein**, which was negligible under the assay conditions. Studies with purified casein and a 2nd casein sample showed that the decreased proteolytic activity with the latter was marked at saturating levels of substrate and negligible at suboptimal levels, suggesting that the 2nd sample of **casein** contained an endogenous,

reversible **protease** inhibitor. Measurement of protease inhibitory activity in serum and in jack fruit seed exts. with the 2 casein prepns. indicated that assay in the presence of the 2nd casein sample underestimated antitryptic activity to the extent of 28% and 29%, resp. Similarly, underestimations of antielastase activities were 25% and 36% in serum and the seed extract, resp. There was no difference in the estimated level of antichymotryptic activity with the 2 casein samples.

L6 ANSWER 19 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1987:551150 CAPLUS
DN 107:151150
TI Culture medium for isolation and selection of protease-producing microorganisms
IN Padegimas, T.; Marmiene, I.; Jurgulis, A.; Petkeviciute, M.
PA "Ferment" Scientific-Industrial Enterprises, USSR
SO U.S.S.R.
From: Otkrytiya, Izobret. 1986, (48), 96.
CODEN: URXXAF
DT Patent
LA Russian
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 1280005	A1	19861230	SU 1984-3715864	19840327

PRAI SU 1984-3715864 19840327
AB Active protease-producing strains of microorganisms are selected and isolated from a culture medium containing agar-agar 35.0-40.0, **industrial casein** 4.0-6.0, peptone 5.0-7.0, glucose 1.0-2.0, yeast hydrolyzate 1.0-2.0, CaCl2 0.003-0.005, MgSO4 0.005-0.007, and bromocresol purple 0.016-0.018 g/dm3 H2O.

L6 ANSWER 20 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1987:614166 CAPLUS
DN 107:214166
TI Isolation of proteolytic enzymes
IN Safarik, Ivo; Vodrazka, Zdenek
PA Czech.
SO Czech., 4 pp.
CODEN: CZXXA9
DT Patent
LA Slovak

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CS 235405	B1	19850515	CS 1983-656	19830202
PRAI CS 1983-656		19830202		

AB Pancreatic and microbial proteases were purified by chromatog. on **com. casein** which was pretreated by heating 2-3 h at 190-250° and thoroughly washed. A glass column was packed with an aqueous suspension of modified casein. A mixture of casein hydrolyzate and a predetd. amount of trypsin was applied at the top, and Proteins were eluted with water. From the applied proteolytic activity, 13.4% went with the proteins and 75% was eluted with 1M (NH4)2SO4. Sp. activity of the purified enzyme preparation increased 10.6 times.

L6 ANSWER 21 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1981:117483 CAPLUS
DN 94:117483
TI Casein inhibition of Clostridium perfringens growth and exoprotease production
AU Curran, Joanne M.; Solberg, Myron; Blaschek, Hans P.; Rosen, David
CS Cook Coll., Rutgers, State Univ., New Brunswick, NJ, 08903, USA
SO Journal of Food Science (1981), 46(1), 169-73, 177
CODEN: JFDSAZ; ISSN: 0022-1147
DT Journal
LA English
AB Growth of C. perfringens 3624 on a defined medium containing ANRC Reference Casein as the N source was investigated. Gas production, monitored manometrically as an index of growth, indicated a depressed growth response of the organism in the casein-containing medium. Increased growth response resulting from pepsin treatment of the casein was largely due to the enzyme serving as a N source. Chelation of Fe by casein was not responsible for the growth inhibition. Casein suspended in complete medium was not inhibitory to the organism. Growth studies indicated that native casein was not available as a N source to the organism. Acid-hydrolyzed **casein** and

com. casein hydrolyzate served as suitable N sources for growth of the organism; however, exoprotease production was repressed in both media as well as in media containing native casein as the sole N source. C. perfringens Produced exoprotease in a completely defined medium containing synthetic amino acids, indicating the possible presence of an amino acid or a metabolite, not produced in the casein-containing medium, which depressed the enzyme-synthesizing mechanism.

L6 ANSWER 22 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1982:405121 CAPLUS
DN 97:5121
TI The effect of feed protein and carbohydrate content on protease activity in the intestinal juice of rainbow trout (Salmo gairdneri)
AU Plantikow, Harald
CS Sekt. Biol., Wilhelm-Pieck-Univ., Rostock, DDR-2500, Ger. Dem. Rep.
SO Wissenschaftliche Zeitschrift der Wilhelm-Pieck-Universitaet Rostock, Mathematisch-Naturwissenschaftliche Reihe (1981), 30(4-5), 101-4
CODEN: WZWRD5; ISSN: 0323-4681
DT Journal
LA German
AB The intestinal juice volume (volume of the centrifuged intestinal content) and protease [9001-92-7] activity of rainbow trout were investigated during the digestion of **casein**- and starch [9005-25-8]-rich **feeds** (65 and 60% of feed, resp.). The intestinal juice volume and the protease activity depended greatly on the feeding interval and on feed quality. The maximum values of intestinal juice volume and enzyme activity were found 6 h after ingestion of either feed. Starch-rich feeds leads to increased intestinal juice volume and a higher **protease** activity as compared to **casein**-rich **feeds**. The rate of inactivation of protease was greater after feeding the starch-rich ration.

L6 ANSWER 23 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1982:525888 CAPLUS
DN 97:125888
TI Use of some bacterial **proteases** for the preparation of **casein** hydrolyzates
AU Erin, A.

CS USSR
SO Tr. Tallin. Politekhn. In-t (1981), (510), 77-84
From: Ref. Zh., Biol. Khim. 1982, Abstr. No. 11Ch225
DT Journal
LA Russian
AB Title only translated.

L6 ANSWER 24 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1983:141857 CAPLUS
DN 98:141857
TI Study of the possible use of immobilized proteases in the production of a
nutritive medium for microorganisms
AU Voronkina, I. M.; Voronina, N. G.
CS USSR
SO Biokhimiya i Biofiz. Mikroorganizmov, (Gor'kii) (1981), (9), 54-6
From: Ref. Zh., Biol. Khim. 1982, Abstr. No. 22Ts214
DT Journal
LA Russian
AB Title only translated.

L6 ANSWER 25 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1982:81847 CAPLUS
DN 96:81847
TI Study of casein hydrolysis by immobilized Protosubtilin
AU Neklyudov, A. D.; Denyakina, E. K.; Tsibanov, V. V.; Loginova, T. A.
CS Vses. Nauchno-Issled. Inst. Tekhnol. Krovezamenitelei Gorm. Prep., Moscow,
USSR
SO Voprosy Pitaniya (1981), (6), 24-8
CODEN: VPITAR; ISSN: 0042-8833
DT Journal
LA Russian
AB The hydrolysis of Na caseinate by Protosubtilin G10+ (an enzyme preparation from Bacillus subtilis containing amylase and a complex mixture of
neutral and alkaline proteinases) immobilized on silica gel was studied. The
optimum conditions for enzymic reaction were pH 8.5, temperature 60°, and
casein concentration 0.35%. The apparent Km and Vmax values were 2.48 μmol/mL
and 25.6 μmol/min/mg protein, resp. An empirical equation is given for
calculating the kinetic parameters of the reaction. The hydrolyzate contained
various oligopeptides and low concns. of free amino acids (30%).
Overnight incubation of the hydrolyzate with leucine aminopeptidase at
37° increased the free amino acid content to 80%.

L6 ANSWER 26 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1974:503178 CAPLUS
DN 81:103178
TI Use of sodium caseinate as a substrate to measure the proteolytic activity of enzymic preparations
AU D'yachenko, P. F.; Sergeeva, V. F.; Evtikhov, P. N.; Bogorad, G. V.; Vasil'eva, R. P.
CS All-Union Res. Inst. Milk Ind., Moscow, USSR
SO Prikladnaya Biokhimiya i Mikrobiologiya (1974), 10(3), 492-4
CODEN: PBMIAK; ISSN: 0555-1099
DT Journal
LA Russian
AB The possible use of Na caseinate as a substrate for the measurement of the proteolytic activity of enzymic prepns. of microbial origin was studied. Protease activity was measured by 2 methods using 3 substrates: **industrial casein**, Gammersten's **casein**, and Na caseinate. All 3 substrates were found acceptable.

L6 ANSWER 27 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1972:524924 CAPLUS
DN 77:124924
TI Immunochemical studies on milk components. V. Comparative examination on the antigenicity of **casein** hydrolyzed by some **proteases**
AU Tokita, Fumisaburo; Takahashi, Fujio
CS Coll. Agric., Shinshu Univ., Ina, Japan
SO Milchwissenschaft (1972), 27(7), 422-6
CODEN: MILCAD; ISSN: 0026-3788
DT Journal
LA English
AB Expts. were carried out to determine the antigenic properties of casein hydrolyzed by various **com. proteases** from animals, microorganisms, and a plant. Nagarse (Bacillus subtilis) and fungal (Aspergillus oryzae) enzymes had high proteolytic activities against casein, and considerable losses of the antigenic activities were found in the hydrolyzates. Pronase-P (Streptomyces griseus) also had high proteolytic activity against casein but low antigenic activity was retained in the hydrolyzate for a relatively long time. The antigenic activities of casein hydrolyzed by pancreatin, pepsin, and papain gradually decreased and were almost destroyed after 9 hr. The casein hydrolyzed by trypsin, α-chymotrypsin, pepsin and rennin kept

relatively high antigenic activity, even after 9 hr. The decrease or elimination of the antigenic activity of casein was greatly influenced by the proteolytic activity and substrate specificity of the protease used. Furthermore, it may be presumed that the antigenic structure of casein is cleaved effectively by a protease having pepsin-like substrate specificity. When casein was hydrolyzed by rennin, pepsin, and trypsin, or by pepsin and trypsin successively, the lowering or elimination of the antigenic activity of casein was mainly affected by the rate of hydrolysis of casein by pepsin. The antigen values of casein were decreased more rapidly by trypsin after partial hydrolysis by pepsin at pH 2.0 than by trypsin alone.

L6 ANSWER 28 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1971:487329 CAPLUS
DN 75:87329
TI Preparation of cheese from casein
IN Fukumoto, Toshiichiro; Kawamoto, Nagashi
PA Ezaki, Toshiichi
SO Jpn. Tokkyo Koho, 4 pp.
CODEN: JAXXAD
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 45038501	B4	19701205	JP 19670218	

AB The rapid enzymic hydrolysis method to give process cheeses is described. Thus, 5 kg **com. casein** is washed 3 times with 16 l. tap water, H2O-separated, mixed with 69 l. tap water and 1.27 l. of 10% aqueous NaOH, dissolved at 80°, deodorized and decolored with active C, mixed with 5 kg plant-origin hardened oil, 83 g DHANa (an antiseptic), and 73 g emulsifier, sterilized 15 min at 80°, homogenized at 60° and 150 kg/cm2, cooled to 40°, adjusted to pH 5.3 with 340 g of 50% aqueous lactic acid, reacted 20 min with 13 + 104 units lysopus[sic]-acidic protease, mixed with 135 g CaCl2, allowed to stand 10

min, mixed with 6 + 104 units fungusneutral protease, dehydrated to
45-50% H2O content, ripened 7-10 days at 9-10°, and mixed with
slight amount of nat. cheese, perfume, emulsifier, and H2O to give a process
cheese.

L6 ANSWER 29 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1966:413518 CAPLUS
DN 65:13518
OREF 65:2530f-g
TI Use of casein in assays for proteolytic activity in tissue extracts. A
warning
AU Marrink, J.; Gruber, M.
CS Univ. Groningen, Neth.
SO Biochimica et Biophysica Acta (1966), 118(2), 438-9
CODEN: BBACAQ; ISSN: 0006-3002
DT Journal
LA English
AB Spleen exts. were assayed for proteolytic activity by incubating casein
with the enzyme preparation, precipitating the unsplit protein and polypeptides with
CCl3CO2H, filtering, and then measuring of the absorbance of the filtrate
at 280 mμ. Exts. of spleen gave anomalous results, i.e. a
heat-resistant activity. This activity was not proteolytic; specific
methods for peptides (Folin, ninhydrin) gave neg. results. The spurious
activity was traced to the presence in the casein preparation of RNase, which
depolymerized the RNA present in the enzyme preparation Eleven com.
casein prepns. from different sources were assayed for RNase and
they contained 5-25 γ ribonuclease/g. casein. It is concluded that
tissue exts. containing RNA should not be assayed for (neutral) proteolytic
activity by incubating the enzyme with casein without prior destruction of
the RNase in the casein.

L6 ANSWER 30 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1945:16115 CAPLUS
DN 39:16115
OREF 39:2522d-f
TI Presence of a proteolytic enzyme in casein
AU Warner, Robert C.; Polis, Edith
SO Journal of the American Chemical Society (1945), 67, 529-32
CODEN: JACSAT; ISSN: 0002-7863

DT Journal
LA Unavailable
AB This study was the result of the observation that a concentrated solution of
com. casein (I) in borax rapidly decreases in viscosity
with time. The change is accompanied by an increase in the concentration of N
products which are soluble at pH 4.6 and in trichloroacetic acid and is
abolished by heating the solution at 80° for 10 min. This proteolysis
of I solns. is attributed to the presence of an enzyme because: the
activity is destroyed by heat, it has a definite pH optimum (8.5), the
activity can be concentrated, and the proteolysis proceeds in sterile solns.
The enzyme was present in all samples of com. I examined and in all laboratory
prepns. made by the usual methods. It is not known whether the enzyme is
secreted in milk as such or is of bacterial origin. Curves show changes
in viscosity and soluble N in a I solution at pH 8.6, in the viscosity of 9.71%
I solns., and increase in soluble N as a function of pH. The I solns. in
which the enzyme had been destroyed by heat or rendered inactive at a high
pH show a slow increase in viscosity (a maximum at pH 10.3), which may be
related to a slow structural change in the I.

L6 ANSWER 31 OF 31 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1946:26265 CAPLUS
DN 40:26265
OREF 40:5166h
TI Cheese and other substances depending on the clotting of milk
IN Shimwell, John L.; Evans, Jack E.
PA Norman Evans & Rais Ltd.
DT Patent
LA Unavailable
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 565788		19441128	GB	

AB In the manufacture of cheese or **casein** for **industrial**
purposes or in the production of junket a bacterial proteinase produced by
growing bacteria in a nutrient medium is used as the clotting agent for

milk, by the same procedure as when an animal rennet is used.